# NOTES ON PLEUROLITIIOBIUS OF TURKEY (CHILOPODA: LITHOBIOMORPHA) 

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Abstract.-The Turkish centipedes belonging to Pleurolithobins Verhoeff, 1899 are listed and discussed: P. jonicus Silvestri, 1896, previously known only through doubtful data, and P. orientis (Chamberlin, 1952) (n. comb.), previously recorded only on the original description, are fully redescribed and new faunistic data are given.

The following new synonymies are proposed: Turkobius Chamberlin, 1952 = Pleurolithobius Verhoeff, 1899; Archilithohius integrior caducus Chamberlin, $1952=$ Pleurolithobius orientis (Chamberlin, 1952); Pleurolithobius atopior Chamberlin, $1952=$ Plenrolithobins orientis (Chamberlin, 1952).

Key Words: centipedes, Pleurolithobius

The object of this paper is to summarize our knowledge of the species of the genus Pleurolithobius Verhoeff, 1899 presently known from Turkey (as politically constituted today). Two taxa are recognized for this area: $P$. jonicus Silvestri, 1894 and $P$. orientis (Chamberlin, 1957).

For each taxon, literature records for the study area are reported, material examined is listed geographically from N to S and from W to E, gcographical distribution is discussed, description of material examined including taxonomical notes is provided.

The following abbreviations have been used: $\mathrm{MZ}=$ coll. M . Zapparoli; $\mathrm{W}=$ coll. R. V. Chamberlin, National Museum of Natural History, Smithsonian Institution, Washington; vil. $=$ vilayet ( $=$ province) .

The original labels accompanying the type specimens are quoted integrally and indicated in quotation marks (" ").

Pleurolithobins jonicus Silvestri, 1896
?Pleurolithobius jonicus: Matic, 1980: 98.

Material examined.-1 $\%$, vil. Canakkale, Truva, m 70, 23.JV.1982, A. Vigna leg. (MZ); 4 if?, vil. Canakkale, dint. Ayvacik, m 350, 23.IV.1982, M. Bologna leg. (MZ);
 1 \&, ibidem, M. Zapparoli leg. (MZ); 1 ㅇ, vil. Izmir, Izmir, 15.IV.1973, V. Sbordoni leg. (MZ); 1 \& , 1 \&, vil. Balikesir, dint. Havran, 50 km prima di Balikesir, m1 450, 23.IV.1982, M. Zapparoli leg. (MZ).

Distribution.-Southern Italy (excl. Sicily), southern Yugoslavia (Montenegro), Albania, mainland Greece and Ionian Islands, southern Bulgaria and western Anatolia. Matic and Golemansky (1964) record P. jonicus from Crete, but this record is doubtful and needs confirmation.

Description.-Size $9.5-12.0 \mathrm{~mm}$ long, $1.25-1.27 \mathrm{~mm}$ broad at T. 10; color light brown.

Head slightly wrinkled, broader than long and broader than T. 1, posterior border straight, posterior marginal ridge with median thickening, lateral marginal interrup-


Figs. 1-4. Pleurolthobius jonicus Silvestri, 1896 (Ayvacik). 1, Righı ocelli and organ of Tömösvary (Tö). 2. Dental margin of prosternum, veniral. 3. Right female gonopod, ventral. 4, Left female gonopod, dorsal. Scales: $1-0.2 \mathrm{~mm}: 2-4-0.1 \mathrm{~mm}$.
tions present; antennae about a third of body length with 32-41 articles, the terminal one about 2-3 times as long as penultimate: ocelli $1+1,2$ (Fig. 1). depigmented or slightly pigmented, postero-superior ocellus about the same size of principal ocellus, organ of Tömösvary of the same size or slightly larger than secondary ocelli; prosternum (Fig. 2) with $2+2$ teeth, porodont setiform, lateral to porodont the shoulders are absent or barely distinct.

Tergites slightly wrinkled; T. I broader than T. 3, almost rectangular with posterior border straight or slightly sinuated; lateral border parallel in TT. 3, 5, 7 and 8, slightly convergent posteriorly in T. 10, posteriorly convergent in TT. 12 and 14; posterior angles rounded in TT. 3, 5, 7 and 8, angled in TT. 10, 12 and 14; posterior border straight or slightly sinuated in TT. 3, 5 and 7, sinuated in TT. 8 and 10, emarginate in T. 12,
straight or emarginate in T. 14; TT. 9 and 11 without triangular projections on the posterior angles, T. I 3 generally without triangular projections, sometimes only slightly produced; intermediate tergites with rounded posterior angles and straight posterior border: T. 16 of the male with lobate projection at the posterior angles as figured in Matic and Golemansky (1964: fig. 1).

Anterior legs with tarsal articulations distinct, see Table 1 ( $\boldsymbol{0} \boldsymbol{\delta}$ ) and Table 2 ( $(\%)$ for spinulation; coxal pores $4,3,3,2$ or $4,3,3,3$ ( $\hat{\delta} \hat{\delta}), 5,4,4,4$ or $4,4,4,4$ ( $\%$ ) $)$, circular, separated from one another by a space equal, greater or smaller than their own diameter. females with proximal pore of coxac Xll generally smaller; males with femur and tibia XIII evidently thickened (see Matic and Golemansky 1964: fig. 1), XIV legs not thickened, male with distal end of tibia XV with dorsolateral swelling bearing a tuft of

Table 1. Pleurolithobut jomcus Silvestri, 1896. Spinulation (*), ơ̂; letters in parentheses indicate variable spines.

|  | Ventral |  |  |  |  | Dorsal |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | C | \% | P | F | T | C | ir | P | F | T |
| 1 | - | - | - | - | m | - | - | (p) | a | a |
| 2 | - | - | - | (m) | m | - | - | (p) | $\mathrm{a}(\mathrm{p})$ | a |
| 3 | - | - | - | (m) | m | - | - | (p) | ap | a |
| 4 | - | - | - | (a)m | m | - | - | (p) | ap | $\mathrm{a}(\mathrm{p})$ |
| 5 | - | - | - | (a)m | (a)m | - | - | (p) | ap | ap |
| 6 | - | - | - | am | am | - | - | (p) | ap | ap |
| 7-8 | - | - | (m) | am | am | - | - | (p) | ap | ap |
| 9 | - | - | $\mathrm{m}(\mathrm{p})$ | $a m(p)$ | am | - | - | (p) | ap | ap |
| 10 | - | - | $\mathrm{m}(\mathrm{p})$ | $\operatorname{am}(\mathrm{p})$ | am | - | - | (m)p | ap | ap |
| 11 | - | - | $m(p)$ | $\mathrm{am}(\mathrm{p})$ | am | - | - | (m)p | (a)p | (a)p |
| 12 | - | - | mp | $\mathrm{am}(\mathrm{p})$ | am | - | - | mp | p | p |
| 13 | - | (m) | mp | m | m | - | - | (m)p | p | - |
| 14 | - | m | mp | m | m | - | - | mp | p | - |
| 15 | - | m | $\mathrm{m}(\mathrm{p})$ | m | - | - | - | mp | p | - |

${ }^{*} \mathrm{C}=$ coxa, $\mathrm{Ir}=$ trochanter, $\mathrm{P}=$ prefemur, $\mathrm{F}=$ femur, $\mathrm{T}=$ tibia; $\mathrm{a}=$ antcrior spur, $\mathrm{m}=$ medial, $\mathrm{p}=$ posterior.
some setac (see Matic and Golemansky 1964: fig. 1), male with DpP XV spine inserted on the latero-internal side of the article, females with DpP XV spine normally positioned; females with XIII-XV legs without special modifications; apical claw of XV legs with accessory claw one-half or two-thirds of the principal claw length; glandular pores on XII-XV legs.

Male first genital sternite with $8-10$ setae, second genital sternite without setae, gonopods without apical setae.

Female gonopods (Figs. 3 and 4) with $3+3$ long conical spurs, progressively longer and larger from the internal one to the external, internal spur generally lying behind the inlermediate spur, apical claw narrow and without lateral denticles; basal article with a group of 6 relatively strong dorsolateral setae and a group of 6-7 dorsomedial setae. as strong as the dorsolateral setae, positioned near the insertion of the spurs, seeond article with 7-9 dorsolateral setae arranged in two rows and two dorsomedial

Table 2. Pleurolithobius jonicus Silvestri, 1896. Spinulation, 98 ; letters in paremheses indicate variable spines. See Table 1 for codes explanation.

|  | Ventral |  |  |  |  | Dorsal |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | C | t | P | F | T | C | ${ }^{\text {tr }}$ | P | F | T |
| 1 | - | - | - | (a) | (a)(m) | - | - | (p) | $\mathrm{a}(\mathrm{p})$ | a |
| 2 | - | - | - | (a)(m) | (a)m | - | - | (p) | ap | a |
| 3 | - | - | - | am | (a)m | - | - | (p) | ap | a |
| $4-7$ | - | - | - | am | am | - | - | (p) | ap | ap |
| 8 | - | - | mp | amp | am | - | - | (p) | ap | ap |
| 9 | - | - | mp | amp | am | - | - | (m)p | ap | ap |
| 10 | - | - | $m p$ | amp | am | - | - | mp | (a)p | ap |
| 11 | - | - | $m p$ | amp | am | - | - | mp | p | ap |
| 12 | - | - | mp | amp | am | - | - | mp | p | (a)p |
| 13 | - | (m) | mp | amp | am | - | - | mp | p | p |
| 14 | - | m | mp | amp | am | - | - | mp | p | p |
| 15 | - | m | $\mathrm{m}(\mathrm{p})$ | (a)m | - | - | - | mp | p | (p) |

setae, apical claw with two dorsolateral setae and one dorsomedial seta.

Remarks. - The only known record for Turkey for this species is from Uskudar (vil. Istanbul) (Matic 1980). However, the author doesn't mention the sex or the number of specimens recorded; this record is dubious since it is possible that it might be referred to the next species, $P$. orientis, with females apparently indistinguishable from those of $P$. jonicus and type-locality (Polonezköy) very close to the locality of the Matic (1980) record.

The presence of $P$. jonicus in Turkey is however confirmed by the material recorded here.

The ecology of $P$. jonicus is little known. Minelli and lovane (1987) stated for the Italian populations the general preference of this species for open habitats, from sea level up to 250 m ; Matic and Golemansky (1965) define this species as a "eurybionte"; moreover Matic and Golemansky's (1964, 1965) Bulgarian records have been collected between 340-500 m. The Turkish specimens here recorded were collected in calcareous soils, between 50 and 450 m , in anthropized habitat (Truva), arid open land with Quercus gr. coccifera Linnè and Jumipertes sp. (Ayvacik) and in pine-wood (Havran).

Pleurolithobius orientis (Chamberlin, 1952) Nell Combinition
Turkobius orientis Chamberlin, 1952: 225. Archilithobius integrior caducus Chamberlin, 1952: 236 syn. nov.
Pleurolithobius atopior Chamberlin, 1952: 254 syn. nov.

Material examined. $-2 \delta \delta \overline{1}, 1$ \&, vil. Istanbul, Belgrat Ormani, m 100, Büyükdere, 17.V.1987, A. Vigna leg.; 2 o̊s, 9 \&f, vil. Istanbul, ibidem, M. Zapparoli leg. (MZ); 1 of (Holotypus), "L. oriemitis, ${ }^{\circ}$, type, Polonezkö, 15.V.48," "43-642" (W); 1 o (here formally designated as Lectotypus of P/ellrolithobius atopior Chamberlin, 1952), 1 o (here formally designated Paralectotypus of

Pleurolithohius atopior Chamberlin, 1952), "Plewrolithobius atopior Ch., Types, Polonezköy, 15.V.48," "51-794" (W).

Distribution.-Species formerly known only for its type locality, Polonezköy, and Yalova, both on the Asiatic side of the vil. Istanbul. $P$. orientis is here recorded for the first time on the European side of Turkey. This species is also known for the islands of Kos and Leros (southern Sporades Archipelago) (M. Zapparoli, unpublished data).

Description of the holotypus. - Female. Size 19 mm long, 2.7 mm broad at T. 10; color chestnut.

Head smooth, 3.3 mm broad, 3.0 mm long, posterior border almost straight, posterior marginal ridge with median thickening; antennae 5.5 mm long, with 39 articles (right), Ieft antenna mutilated, the first 3-4 proximal articles large, the next ones are longer than broader, last article about three times as long as penultimate: ocelli $1+1.2$ depigmented, principal ocellus not contiguous with the secondary ocelli, pos-tero-superior ocellus larger than principal ocellus; organ of Tömösvary of the same size as the postero-superior ocellus; the forcipules are absent probably because dissected by Chamberlin, since they are drawn in the original work (Chamberlin 1952: fig. 31).

Tergites wrinkled: T. I subrectangular. narrower than T. 3, posterior border slightly sinuate; lateral borders parallel in TT. 3, 5, 7 and 8 , slightly posteriorly convergent in T. 10, posteriorly convergent in TT. 12 and 14: posterior border slightly sinuate in TT. 3, 5 and 8 , straight in T. 7, slightly emarginated in TT. 10 and 12, emarginated in T. 14; posterior angles rounded in TT. 3, 5 and 8 , squared in TT. 7, 10, 12 and 14; TT. 9 and 11 without triangular projection on the posterior angles, T .13 with slight projection; intermediate tergite with posterior borders almost straight.

Anterior legs with tarsal articulations distinct, see Table 3 for spinulation; coxal pores $5,4,4,4$, circular and separated one from

Table 3. Pleurolithobius orientis (Chamberlin, 1952). Holotypus: spinulanon. See Table 1 for codes explanation.

|  | Ventral |  |  |  |  | Dorsal |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | C | tr | P | F | T | C | tr | P | F | T |
| 1 | - | - | - | - | a | - | - | p | a | a |
| 2 | - | - | - | - | am | - | - | p | ap | a |
| 3-5 | - | - | - | am | am | - | - | p | ap | a |
| 6-7 | - | - | - | am | am | - | - | p | ap | ap |
| 8-9 | - | - | m | am | am | - | - | p | ap | ap |
| 10 | - | - | mp | am | am | - | - | mp | p | ap |
| 11 | - | - | mp | amp | am | - | - | mp | p | ap |
| 12-13 | - | m | mp | amp | am | - | - | mp | p | p |
| 14 | - | m | amp | amp | am | - | - | mp | p | p |
| 15 | - | m | amp | am | - | - | - | mp | p | - |

another by a space little larger than their own diameter, the proximal porus relatively smaller than the other; XV legs 4 mm long. apical claw with accessory claw about onehalf as long as the principal claw: glandular pores on XII-XV legs, those of femur and tibia XIII sparse and evident.

Gonopods with $3+3$ long spurs, the inner one relatively shorter than the others, apical claw narrow and without lateral denticles.

A redeseription of the male, based on the Lectotypus of P. atopior, follows.

Size 12.50 mm long, 1.75 mm broad at T. 10: color chestnut.

Head as broad as long, posterior border almost straight, posterior marginal ridge with median thickening; antennae 5.0 mm long, with 39 articles (left), right antenna mutilated at the level of article 22, the proximal 3-4 articles larger, the following ones are as broad as long, last article about three times as long as the penultimate; ocelli $1+1,2$, depigmented, the two posterior ocelli about twice larger than the two anterior ones; organ of Tömösvary smaller than one anterior ocellus; the forcipules are absent, probably because they were dissected by Chamberlin, since they are figured in the original work (Chamberlin 1952: fig. 44).

Tergites wrinkled; T. I subrectangular, smaller than T. 3, posterior border slightly sinuate: lateral borders parallel in TT. 3, 5, 7 and 8, slightly posteriorly convergent in
T. 10. posteriorly convergent in TT. 12 and 14; posterior border slightly sinuate in T. 3 , sinuate in T. 5, straight in T. 5, slightly emarginate in TT. 8, 10 and 12, emarginate in T. 14; posterior angles rounded in TT. 3, 5, 7 and 8, squared in TT. 10, 12 and 14; TT. 9 and 11 without triangular projections on the posterior angles, T. 13 with feebly projection; intermediate tergites with posterior border almost straight; last tergite with lateral border posteriorly convergent, posterior border deeply concave, posterior angles rounded, posteriorly projected and rising slightly.
Anterior legs with tarsal articulation; coxal pores $4.4,3,2$, circular and separated one from another by a space little larger than their own diameter, proximal pore of XII and XIII coxae smaller than the other and near the next pore; femur and tibia of XIII legs thickened (cf. Fig. 9), femur little thicker than tibia and with a dorsal median sulcus not reaching the ends of the article; XIV legs little thickened but without special structures: XV legs 3.5 mm long, tibia with a dorsolateral lobe bearing some setae at the distal end of the article. DpP spine inserted on the internal lateral side of the article. apical claw with accessory apical claw about one-half as long as the principal claw: glandular pores XII-XV legs, those of femur and tibia XIII very evident and rather sparse.
First genital sternite with 17-18 setac rel-


Figs. 5-12. Pleurolithobius orientis (Chamberlin, 1952) (Belgrat Ormani). 5, Dental margin of prosternum, ventral. 6, Right ocelli and organ of Tömösvary (Tö). 7, Last male tergite, dorsal. 8, Last male tergite, lateral. 9, Male X111 femur and tibia. dorsal. 10. Male XV tibia, dorsal. 11, Left female gonopod, ventral. 12, Right female gonopod, dorsal. Scales: $5-0.1 \mathrm{~mm} ; 6-0.2 \mathrm{~mm} ; 7-10-0.5 \mathrm{~mm} ; 11-12-0.1 \mathrm{~mm}$.

Table 4. Pleurolthobius ortentis (Chamberlin, 1952). Spinulation, of (Belgrat Ormani); letters in parentheses indicate variable spines. See Table 1 for codes explanation.

|  | Ventral |  |  |  |  | Dorsal |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | C | If | P | F | T | C | Ir | P | F | T |
| 1 | - | - | - | - | J17 | - | - | p | a | a |
| 2 | - | - | - | - | m | - | - | p | a | a |
| 3 | - | - | - | a | m | - | - | p | ap | a |
| 4-7 | - | - | - | am | am | - | - | p | ap | ap |
| 8-9 | - | - | mp | am | am | - | - | (m)p | ap | ap |
| 10 | - | - | mp | am | am | - | - | mp | ap | ap |
| 11 | - | - | $m p$ | amp | am | - | - | mp | ap | ap |
| 12 | - | m | $m p$ | $a m(p)$ | $a m$ | - | - | mp | ap | ap |
| 13 | - | m | mp | $\operatorname{am}(\mathrm{p})$ | am | - | - | mp | p | p |
| 14 | - | m | mp | $a m(p)$ | a | - | - | mp | p | p |
| 15 | - | m | $m(p)$ | (a)m | - | - | - | mp | p | - |

atively long; second genital sternite without setae; gonopods short and with one apical seta.
The specimens from Belgrat Ormani (Biiyükdere, vil. Istanbul) differ from the samples described above in the following characters.
Size 14.0-18.5 mm long, color dark chestnut. Antennae with 36-42 articles; prosternum (Fig. 5) with evident shoulders, relatively smaller in males than in females; ocelli as in Fig. 6.
Tergites, especially the posterior ones. with numerous sparse, relatively long setae: T. 9 without triangular projection to the
posterior angles. T. 11 generally without triangular projections, very little projection when present, T. 13 with very slightly triangular projections. Male last tergite as in Figs. 7 and 8.
See Tables 4 ( $\delta \mathrm{\delta}$ ) and 5 (89) for spinulation. Female with DpP normally positioned: legs with numerous dorsal sparse setae; coxal pores 5,4,4,4 (\%)s), 4, 3, 3,2 or 3,3,3,2 (oे). XIV and XV legs of the only male without multilation both 4.6 mm long. female with XIV legs 3.9-4.5 mm long and XV legs 4.9-5.2 mm long; femur and tibia XIII and tibia XV ligured in Figs. 9 and 10.

Female gonopods (Figs. 11 and 12) with

Table 5. Pleurohthobius orientis (Chamberlin, 1952). Spinulation, if (Belgrat Ormani); letlers in parentheses indicate variable spines. See Table 1 for codes explanation.

|  | Ventral |  |  |  |  | Dorsal |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | C | tr | P | F | I | C | tr | P | F | I |
| 1 | - | - | - | (a)(m) | (a)m | - | - | (p) | a | $a(p)$ |
| 2 | - | - | - | $\mathrm{a}(\mathrm{m})$ | am | - | - | (p) | (a)p | $a(p)$ |
| 3 | - | - | - | am | am | - | - | (p) | ap | $a(p)$ |
| $4-5$ | - | - | - | am | am | - | - | (p) | ap | ap |
| 6-7 | - | - | m(p) | $a m(p)$ | anm | - | - | (p) | ap | ap |
| 8 | - | - | $m p$ | $a m(p)$ | anm | - | - | (m)p | ap | ap |
| 9 | - | - | $m p$ | amp | am | - | - | (m)p | ap | ap |
| 10 | - | - | $m p$ | amp | am | - | - | mp | ap | ap |
| 11 | - | (m) | mp | amp | am | - | - | mp | ap | ap |
| 12 | - | m | (a)mp | amp | am | - | - | mp | p | ap |
| 13 | - | m | (a)nıp | amp | am | - | - | mp | p | (a)p |
| 14 | - | m | (a)mp | amp | am | - | - | mp | p | p |
| 15 | - | m | amp | am | - | - | - | mp | p | - |

$3+3$ long spur, exceptionally $4+3$, progressively longer from the internal one to the external one, internal spur generally lying behind the other two; apical claw narrow and without lateral denticles: basal article with a row of $6-7$ dorsolateral setae and a group of $10-11$ setae positioned near the insertion of the spurs, second article with $9-11$ dorsolateral setae arranged in two rows, and three dorsomedial setac, apical claw with 2-3 dorsolateral setac and one dorsomedial seta.

Remarks. - Chamberlin (1952) based his description of $P$. oricmis on two females. one from Polonezköy (Holotypus) and one from Yalova; he designated this species as the type species of the genus Turkobius Chamberlin, 1952, which he deseribed as new and assigned to the family Gosibiidae. In the genus Turkobius, Chamberlin (1952) includes eight species divided into two subgenera, Turkobius s. str. and Alibius Chamberlin, 1952.

Based on examination of the Holotypus, $T$. orientis must be refered to the genus Pleurolithobius as defined by Verhoeff (1899), and the following new synonymy is proposed: Turkobius s. str. Chamberlin, $1952=$ Pleurolitholius Verhocll, 1899 sym. nov.

It is not the aim of this work to discuss the identity of the other species referred by Chamberlin (1952) to Turkobius; however it is suitable to point out that these taxa belong to Lithobiidac and are certainly unrelated to Pleurolithobius. In fact some taxa belong to Lithotius s. str. (those described under Turkobius s. str.. with the exception of $T$. orientis), and others are referable to a taxon of subgeneric rank of the genus Lithohius Leach, 1814 (those described under Alibius). The identity of Turkobius and the species which Chamberlin (1952) included in this taxon will be discussed in a paper now in preparation.

Chamberlin (1952) has described, on the basis of a female from Polonezköy, Lithobius integrior caducus. This taxon was origi-
nally referred to the genus Archilithobius Stuxberg, 1875 (now considered identical with Lithohins) and was considered at specifie rank in the key that the author (Chamberlin 1952) gave for the Turkish species.

The identity of $L$. integrior caducus cannot be discussed on the basis of the type specimens since the material has been lost (J. Coddington in litt. 1987). The following considerations are therefore based only on the very incomplete original description.

The few characters given by Chamberlin (1952) for L. integrior caducus (especially the shape of the prosternum and the shape of the apical claw of female gonopods) fall well within the variability of $P$. oricntis described above, and the two forms are difficult to distinguish one from another. Morcover, noting not only the precise coincidence of the type-localities of the two taxa, but also the identity of the collecting date of the samples, it is quite justifiable to suppose that the femate deseribed as $L$. integrior caducus and the Holotypus of P. orientis might both likely refer to the same population.
Therefore, the following new synonymy is proposed: Archilithobius integrior caducus Chamberlin, 1952 = Pleurolithobius orientis (Chamberlin, 1952) syn. nov.

Another species described by Chamberlin (1952) on material (two males) collected in the same type-locality and on the same day as $P$. oricntis and L. integrior caducus is $P$. atopior. Holotypus and Paratypus of this species are not indicated in the original work: however two specimens, here examined, labelled "Pleurolithobius atopior Ch., Types, Polonezköy, 15.V.48," preserved in Chamberlin's collection in the National Museum of Natural History of Washington and agrecing with Chamberlin's description of $P$. atopior, represent undoubtedly the syntypical series of this taxon. Therefore these specimens are here formally designated respectively as Lectotypus and Paralectotypus of $P$. atopior.

Based on the study of the type speci-
mens of $P$. atopior it was possible to verify the identity of the characters of this taxon with those here deseribed for the male of $P$. orientis. Consequently, the following new synonymy is proposed: Pleurolithohius atopior Chamberlin, 1952 = Pleurolithobius orientis (Chamberlin, 1952) syn. nov.

As Chamberlin (1952) already stated in his brief discussion on the morphological affinities of $P$. atopior, $P$. orientis is close to $P$. jonicus and is distinguishable from this species by the shape of the last tergite of the male, without lobed projection on the posterior angles. However, this character cannot be used for identification of the females of the two species that, as already stated, are apparently indistinguishable one from another.

On the basis of the material examined it is, however, possible to show some characters useful to distinguish easily, at least for the Anatolian populations, the females of $P$. jonicus from those of $P$. orientis. These characters are: body generally smaller (length $9.5-12.0 \mathrm{~mm}$ ), prosternal shoulder fecble or absent (Fig. 2), T. 1 subrectangular and terminal tergites without sparse setae in $P$. jonicus: body generally larger (length 14.0-18.5 mm ), prosternal shoulder present (Fig. 5), T. 1 trapezoidal and terminal tergites with sparse setae in $P$. orientis.

The ecology of $P$. orientis is practically unknown. This species has been collected at very low altitudes ( $100-200 \mathrm{~m}$ ); the samples from Belgrat Ormani were collected in litter of mixed woodland composed essentially of Acer spp., Quercus spp., Fagus oricntalis Lipsky and Castanea sativa Miller, with an undergrowth characterized by Smilax sp., Crataegus sp. and Erica sp.

Another species recorded for the Turkish fauna and originally deseribed under Pleltrolithobius is Lithohius argacensis Attems, 1905, known for Ercjias Daği (vil. Kayseri) (type-locality) and in some localities of Iran (Attems 1905. 1951, Brölemann 1921). Therefore, the original generic classification of this species is wrong and has not been
followed by the following authors. In fact, Brölemann (1921) and Attems (1951) correctly considered this species under Monotarsobius Verhoeff, 1905.

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## Literature Cited

Altems, C. G. 1905. Myriapoda. In Penther, A. and E. Zederbauer, eds. Ergebnisse einer naturwissenschaftlichen Reise zum Erdschias-Dagh (Kleinasien). Ann. K. K. Nalurhist. Hofmus. 20: 163(1)167(5).
——1951. Ergebnisse der Österreichischen IranExpedition 1949-50. Myriopoden von Iran. Sitzungsb. Österr. Akad. Wiss. Mathem.-Naturw. Kl. 160: 387-426.
Brölemann. H. W. 1921. Myriapods from Mesopotamia and Persia, collected by Mr. P. A. Buxton. J. Bombay nat. Hist. 28: 157-161.

Chamberlin, R. V. 1952. On the Chilopoda of Turkey. Rev. Fac. Sci. Univ. Istambul ser. B 17: 183258.

Matic, Z. 1980. Chilopodes recueillis en Turquie. Liban et Iran. Acta Zool. Bulgarica 15: 93-98.
Matic, Z. and V. Golemansky. 1964. Contribution à la connaissance des Lithobiides (Chilopoda, Lithobiomorpha) en Bulgaric. Ann. Univ. Sofia 57: 99-106.
1965. Nouvelle contribution à la connaissance des Lithobiides (Chilopoda, Lithobiomorpha) en Bulgarie. Ann. Univ. Sofia 58: 13-28.
Minelli, A. and E. Iovane. 1987. Habitat preferences and tarocenoses of Italian centipedes (Chilopoda). Boll. Mus. civ. S1. na1. Venezia 37 (1986): 7-34.
Verhoeff, K. W. 1899. Beıträge zur Kennınis paläark1ischer Myriopoden. XI Aufsa1z: Neue und wenig bekannte Lithobiiden. Verh. Zool. Bot. Gesell. 49: 451-459.

